



RECEIVED

NOV 08 2002

TECH CENTER 1600/2900

SEQUENCE LISTING

<110> KAZAZIAN, HAIG H.
BOEKE, JEF D.
MORAN, JOHN V.
DOMBROSKI, BETH A.

<120> COMPOSITIONS AND METHODS OF USE OF MAMMALIAN RETROTRANSPOSONS

<130> 9596-23U3 (053893-5006-02)

<140> 09/653,812

<141> 2000-09-01

<150> US 08/847,844

<151> 1997-04-28

<150> US 08/749,805

<151> 1996-11-15

<150> US 60/006,831

<151> 1995-11-16

<160> 152

<170> PatentIn version 3.1

<210> 1

<211> 14

<212> PRT

<213> Neurospora crassa

<400> 1

Met Val Gln Leu Lys Ile Leu Tyr Trp Asn Val Gly Lys Ser
1 5 10

<210> 2

<211> 10

<212> PRT

<213> Neurospora crassa

<400> 2

Tyr Asp Ile Val Ala Ile Gln Glu Pro Gly
1 5 10

<210> 3

<211> 10

<212> PRT

<213> Neurospora crassa

<400> 3

Lys Gly Arg Ala Val Ile Tyr Val Asn Lys
1 5 10

<210> 4
<211> 13
<212> PRT
<213> Neurospora crassa

<400> 4

Pro Thr Thr Val Tyr Ser Ile Tyr Ser Pro Ile Leu Thr
1 5 10

<210> 5
<211> 16
<212> PRT
<213> Neurospora crassa

<400> 5

Asn Leu Val Ala Val Gly Asp Leu Asn Leu His His Pro Asp Trp Asp
1 5 10 15

<210> 6
<211> 16
<212> PRT
<213> Neurospora crassa

<400> 6

Gly Glu Pro Thr Arg Leu Gly Asn Ala Thr Arg Gly Glu Arg Asp Gly
1 5 10 15

<210> 7
<211> 13
<212> PRT
<213> Neurospora crassa

<400> 7

Gly Ser Asp His Cys Pro Gln Glu Ile Trp Val Gln Val
1 5 10

<210> 8
<211> 19
<212> PRT
<213> Trypanosoma cruzi

<400> 8

Asp Ile Glu Gln Asn Pro Gly Pro Ile Ala Val Leu Gln Met Asn Val
1 5 10 15

Ser Cys Leu

<210> 9
<211> 10
<212> PRT

<213> Trypanosoma cruzi

<400> 9

Ala Asp Ile Ile Ala Ile Gln Glu Thr Trp
1 5 10

<210> 10

<211> 10

<212> PRT

<213> Trypanosoma cruzi

<400> 10

Gly Gly Gly Val Ala Val Leu Val Arg Lys
1 5 10

<210> 11

<211> 13

<212> PRT

<213> Trypanosoma cruzi

<400> 11

Asp Leu Ile Val Ala Ser Ala Tyr Met Arg Pro Pro Pro
1 5 10

<210> 12

<211> 16

<212> PRT

<213> Trypanosoma cruzi

<400> 12

Pro Leu Leu Leu Cys Gly Asp Phe Asn Met His His Pro Gln Trp Glu
1 5 10 15

<210> 13

<211> 21

<212> PRT

<213> Trypanosoma cruzi

<400> 13

Gly Glu Ile Thr Thr Ala Arg Gly Thr Arg Glu Arg Ser Cys Ile Asp
1 5 10 15

Leu Thr Trp Ser Lys
20

<210> 14

<211> 13

<212> PRT

<213> Trypanosoma cruzi

<400> 14

Leu Ser Asp His Tyr Val Leu Thr Phe Thr Leu His Gln
1 5 10

<210> 15
<211> 17
<212> PRT
<213> Bombyx mori

<400> 15

Met Asp Ile Arg Pro Arg Leu Pro Ile Gly Gln Ile Asn Leu Gly Gly
1 5 10 15

Ala

<210> 16
<211> 10
<212> PRT
<213> Bombyx mori

<400> 16

Leu Asp Ile Val Leu Val Gln Glu Gln Tyr
1 5 10

<210> 17
<211> 10
<212> PRT
<213> Bombyx mori

<400> 17

Lys Ala Gly Val Tyr Ile Arg Asn Arg Val
1 5 10

<210> 18
<211> 13
<212> PRT
<213> Bombyx mori

<400> 18

Asp Leu Tyr Met Val Ser Ala Tyr Phe Gln Tyr Ser Asp
1 5 10

<210> 19
<211> 16
<212> PRT
<213> Bombyx mori

<400> 19

Arg Val Val Ile Cys Ala Asp Thr Asn Ala His Ser Pro Leu Trp His
1 5 10 15

<210> 20
<211> 21
<212> PRT
<213> Bombyx mori

<400> 20

Gly His Leu Pro Thr Phe Ser Thr Ala Asn Gly Glu Ser Tyr Val Asp
1 5 10 15

Val Thr Leu Ser Thr
20

<210> 21
<211> 13
<212> PRT
<213> Bombyx mori

<400> 21

Ser Ser Asp His Arg Leu Ile Val Phe Gly Val Gly Gly
1 5 10

<210> 22
<211> 15
<212> PRT
<213> Drosophila melanogaster

<400> 22

Ile Met Ala Thr Leu Phe Ile Ala Thr Trp Asn Ala Asn Gly Val
1 5 10 15

<210> 23
<211> 10
<212> PRT
<213> Drosophila melanogaster

<400> 23

Ile Asp Val Met Leu Leu Ser Glu Thr His
1 5 10

<210> 24
<211> 10
<212> PRT
<213> Drosophila melanogaster

<400> 24

His Gly Gly Thr Ala Ile Leu Ile Arg Asn
1 5 10

<210> 25
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 25

Leu Leu Thr Leu Ala Ala Val Tyr Cys Pro Pro Arg Phe
1 5 10

<210> 26

<211> 16

<212> PRT

<213> Drosophila melanogaster

<400> 26

His Phe Ile Ala Ala Gly Asp Tyr Asn Ala Lys His Thr His Trp Gly
1 5 10 15

<210> 27

<211> 24

<212> PRT

<213> Drosophila melanogaster

<400> 27

Pro Gly Ser Pro Thr Tyr Trp Pro Ser Asp Leu Asn Lys Leu Pro Asp
1 5 10 15

Leu Ile Asp Phe Ala Val Thr Lys
20

<210> 28

<211> 13

<212> PRT

<213> Drosophila melanogaster

<400> 28

Ser Ser Asp His Ser Pro Val Leu Ile His Leu Arg Arg
1 5 10

<210> 29

<211> 15

<212> PRT

<213> Drosophila melanogaster

<400> 29

Met Gln Ile Ser Leu Asn Ile Val Phe Trp Asn Ala Asn Gly Leu
1 5 10 15

<210> 30

<211> 10

<212> PRT

<213> Drosophila melanogaster

<400> 30

Ile Asp Ile Leu Leu Val Ser Glu Ser His
1 5 10

<210> 31
<211> 10
<212> PRT
<213> Drosophila melanogaster

<400> 31

Arg Gly Gly Ala Ala Met Leu Ile Lys Ser
1 5 10

<210> 32
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 32

Asp Ile Thr Val Gly Ala Val Tyr Pro Arg His Glu Phe
1 5 10

<210> 33
<211> 16
<212> PRT
<213> Drosophila melanogaster

<400> 33

Arg Phe Ile Ala Ala Gly Asp Phe Asn Ala Lys His Ser Trp Trp Gly
1 5 10 15

<210> 34
<211> 24
<212> PRT
<213> Drosophila melanogaster

<400> 34

Thr Gly Glu Pro Thr His Trp Pro Ser Asp Pro Ser Lys Gln Pro Asp
1 5 10 15

Leu Leu Asp Ile Ala Ile Cys Lys
20

<210> 35
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 35

Val Ser Asp His Ser Ala Val Asn Leu Leu Leu Asn Ile
1 5 10

<210> 36
<211> 16
<212> PRT
<213> Drosophila melanogaster

<400> 36

Met Thr Gln Pro Thr Leu Lys Ile Gly Leu Trp Asn Ala Arg Gly Leu
1 5 10 15

<210> 37
<211> 10
<212> PRT
<213> Drosophila melanogaster

<400> 37

Ile Asp Val Met Leu Thr Thr Glu Thr His
1 5 10

<210> 38
<211> 10
<212> PRT
<213> Drosophila melanogaster

<400> 38

Arg Gly Gly Ser Ala Val Ile Ile Lys Ser
1 5 10

<210> 39
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 39

Thr Val Thr Val Ala Ala Val Tyr Leu Pro Pro Ala Glu
1 5 10

<210> 40
<211> 16
<212> PRT
<213> Drosophila melanogaster

<400> 40

Lys Phe Ile Ala Gly Gly Asp Tyr Asn Ala Lys His Ala Trp Trp Gly
1 5 10 15

<210> 41
<211> 24
<212> PRT
<213> Drosophila melanogaster

<400> 41

Thr Gly Glu Pro Thr Phe Tyr Ser Tyr Asn Pro Leu Leu Thr Pro Ser
 1 5 10 15

Ala Leu Asp Phe Phe Ile Thr Cys
 20

<210> 42
 <211> 13
 <212> PRT
 <213> Drosophila melanogaster

<400> 42

Ser Ser Asp His Leu Pro Ile Leu Ala Val Leu His Ala
 1 5 10

<210> 43
 <211> 13
 <212> PRT
 <213> Drosophila teissieri

<400> 43

Met Ser Leu Thr Val Ile Gln Trp Asn Leu Lys Gly Tyr
 1 5 10

<210> 44
 <211> 10
 <212> PRT
 <213> Drosophila teissieri

<400> 44

Pro His Ile Ile Ser Leu Gln Glu Thr His
 1 5 10

<210> 45
 <211> 10
 <212> PRT
 <213> Drosophila teissieri

<400> 45

Phe Gly Gly Val Arg Ile Leu Val His Lys
 1 5 10

<210> 46
 <211> 13
 <212> PRT
 <213> Drosophila teissieri

<400> 46

Lys Leu Asn Ile Phe Ser Thr Tyr Ile Ser Pro Thr Lys
 1 5 10

<210> 47
<211> 16
<212> PRT
<213> Drosophila teissieri

<400> 47

Pro Ser Leu Ile Thr Gly Asp Phe Asn Gly Trp His Pro Ser Trp Gly
1 5 10 15

<210> 48
<211> 16
<212> PRT
<213> Drosophila teissieri

<400> 48

Asp Lys Ser Pro Thr His Phe Ser Thr His Asn Thr Tyr Ser His Ile
1 5 10 15

<210> 49
<211> 13
<212> PRT
<213> Drosophila teissieri

<400> 49

Gly Ser Asp His Phe Pro Ile Ile Thr Thr Leu Phe Pro
1 5 10

<210> 50
<211> 18
<212> PRT
<213> Homo sapiens

<400> 50

Met Thr Gly Ser Asn Ser His Ile Thr Ile Leu Thr Leu Asn Ile Asn
1 5 10 15

Gly Leu

<210> 51
<211> 10
<212> PRT
<213> Homo sapiens

<400> 51

Pro Ser Val Cys Cys Ile Gln Glu Thr His
1 5 10

<210> 52
<211> 10
<212> PRT
<213> Homo sapiens

<400> 52

Lys Ala Gly Val Ala Ile Leu Val Ser Asp
1 5 10

<210> 53

<211> 13

<212> PRT

<213> Homo sapiens

<400> 53

Glu Leu Thr Ile Leu Asn Ile Tyr Ala Pro Asn Thr Gly
1 5 10

<210> 54

<211> 16

<212> PRT

<213> Homo sapiens

<400> 54

His Thr Leu Ile Met Gly Asp Phe Asn Thr Pro Leu Ser Thr Leu Asp
1 5 10 15

<210> 55

<211> 22

<212> PRT

<213> Homo sapiens

<400> 55

Thr Glu Tyr Thr Phe Phe Ser Ala Pro His His Thr Tyr Ser Lys Ile
1 5 10 15

Asp His Ile Val Gly Ser
20

<210> 56

<211> 13

<212> PRT

<213> Homo sapiens

<400> 56

Leu Ser Asp His Ser Ala Ile Lys Leu Glu Leu Arg Ile
1 5 10

<210> 57

<211> 13

<212> PRT

<213> Xenopus laevis

<400> 57

Met Ala Leu Ser Ile Ser Thr Leu Asn Thr Asn Gly Cys
1 5 10

<210> 58
<211> 10
<212> PRT
<213> Xenopus laevis

<400> 58

Tyr Ser Val Ser Phe Leu Gln Glu Thr His
1 5 10

<210> 59
<211> 10
<212> PRT
<213> Xenopus laevis

<400> 59

Ser Cys Gly Val Val Thr Leu Phe Ser Asp
1 5 10

<210> 60
<211> 13
<212> PRT
<213> Xenopus laevis

<400> 60

Thr Tyr Asn Leu Met Asn Val Tyr Ala Pro Thr Thr Gly
1 5 10

<210> 61
<211> 16
<212> PRT
<213> Xenopus laevis

<400> 61

Ala Leu Ile Ile Gly Gly Asp Phe Asn Tyr Thr Leu Asp Ala Arg Asp
1 5 10 15

<210> 62
<211> 24
<212> PRT
<213> Xenopus laevis

<400> 62

Val Ala Phe Thr Tyr Val Arg Val Arg Asp Gly His Val Ser Gln Ser
1 5 10 15

Arg Ile Asp Arg Ile Tyr Ile Ser
20

<210> 63
<211> 13
<212> PRT
<213> *Xenopus laevis*

<400> 63

Phe Ser Asp His Asn Cys Val Ser Leu Arg Met Ser Ile
1 5 10

<210> 64
<211> 19
<212> PRT
<213> *Zea mays*

<400> 64

Gly Tyr Tyr Pro Met Asn Thr Asn Cys Cys Ile Phe Ser Trp Asn Val
1 5 10 15

Arg Gly Leu

<210> 65
<211> 10
<212> PRT
<213> *Zea mays*

<400> 65

Ala Thr Ser Val Cys Leu Gln Glu Thr Lys
1 5 10

<210> 66
<211> 10
<212> PRT
<213> *Zea mays*

<400> 66

Gly Ala Ser Gly Gly Ile Leu Ile Ala Cys
1 5 10

<210> 67
<211> 13
<212> PRT
<213> *Zea mays*

<400> 67

Val Trp Asp Leu Thr Ala Val Tyr Gly Pro Gln Gln Glu
1 5 10

<210> 68
<211> 16
<212> PRT
<213> *Zea mays*

<400> 68

Glu Trp Leu Ile Leu Gly Asp Phe Asn Met Ile Arg Arg Val Gly Glu
1 5 10 15

<210> 69

<211> 23

<212> PRT

<213> Zea mays

<400> 69

Lys Lys Phe Thr Trp Ser Asn Glu Gln Asp Asp Pro Thr Met Ser Arg
1 5 10 15

Ile Asp Arg Leu Met Ala Thr
20

<210> 70

<211> 13

<212> PRT

<213> Zea mays

<400> 70

Thr Ser Asp His Ser Pro Leu Leu Met Gln Gly His Ser
1 5 10

<210> 71

<211> 19

<212> PRT

<213> Dictyostelium discoideum

<400> 71

Asn Lys Thr Ile Lys Lys Asn Thr Ile Arg Ile Gly Val Trp Asn Val
1 5 10 15

Gln Gly Ser

<210> 72

<211> 10

<212> PRT

<213> Dictyostelium discoideum

<400> 72

Leu Asp Ala Ala Leu Leu Thr Glu Thr Asn
1 5 10

<210> 73

<211> 10

<212> PRT

<213> Dictyostelium discoideum

<400> 73

Gln Gly Val Ser Gln Ile Ile Ile Asn Thr
1 5 10

<210> 74

<211> 13

<212> PRT

<213> Dictyostelium discoideum

<400> 74

Gln Ile Lys Cys Thr Thr Ile Tyr Ala Pro Ala Lys Ser
1 5 10

<210> 75

<211> 16

<212> PRT

<213> Dictyostelium discoideum

<400> 75

Ser Asp Ile Ile Thr Gly Asp Phe Asn Val Asp Cys Ser Val Asp Asn
1 5 10 15

<210> 76

<211> 18

<212> PRT

<213> Dictyostelium discoideum

<400> 76

Asn Gly Ile Thr Phe Pro Arg Asn Lys Ser Thr Ile Asp Arg Val Phe
1 5 10 15

Val Ser

<210> 77

<211> 13

<212> PRT

<213> Dictyostelium discoideum

<400> 77

Lys Ser Asp His Asn Met Val Ile Ile Glu Leu Lys Ile
1 5 10

<210> 78

<211> 19

<212> PRT

<213> Homo sapiens

<400> 78

Ser Pro Ser Gly Lys Pro Ala Thr Leu Lys Ile Cys Ser Trp Asn Val
 1 5 10 15

Asp Gly Leu

<210> 79
 <211> 10
 <212> PRT
 <213> Homo sapiens

<400> 79

Pro Asp Ile Leu Cys Leu Gln Glu Thr Lys
 1 5 10

<210> 80
 <211> 10
 <212> PRT
 <213> Homo sapiens

<400> 80

Gly Tyr Ser Gly Val Gly Leu Leu Ser Arg
 1 5 10

<210> 81
 <211> 13
 <212> PRT
 <213> Homo sapiens

<400> 81

Ser Phe Val Leu Val Thr Ala Tyr Val Pro Asn Ala Gly
 1 5 10

<210> 82
 <211> 16
 <212> PRT
 <213> Homo sapiens

<400> 82

Pro Leu Val Leu Cys Gly Asp Leu Asn Val Ala His Glu Glu Ile Asp
 1 5 10 15

<210> 83
 <211> 24
 <212> PRT
 <213> Homo sapiens

<400> 83

Thr Phe Trp Thr Tyr Met Met Asn Ala Arg Ser Lys Asn Val Gly Trp
 1 5 10 15

Arg Leu Asp Tyr Phe Leu Leu Ser
20

<210> 84
<211> 13
<212> PRT
<213> Homo sapiens

<400> 84

Gly Ser Asp His Cys Pro Ile Thr Leu Tyr Leu Ala Leu
1 5 10

<210> 85
<211> 12
<212> PRT
<213> Bos taurus

<400> 85

Met Leu Lys Ile Ala Ala Phe Asn Ile Arg Thr Phe
1 5 10

<210> 86
<211> 10
<212> PRT
<213> Bos taurus

<400> 86

Tyr Asp Ile Val Leu Ile Gln Glu Val Arg
1 5 10

<210> 87
<211> 16
<212> PRT
<213> Bos taurus

<400> 87

Asp Val Met Leu Met Gly Asp Phe Asn Ala Asp Cys Ser Tyr Val Thr
1 5 10 15

<210> 88
<211> 9
<212> PRT
<213> Bos taurus

<400> 88

Cys Ala Tyr Asp Arg Ile Val Val Ala
1 5

<210> 89
<211> 12
<212> PRT
<213> Bos taurus

<400> 89

Ile Ser Asp His Tyr Pro Val Glu Val Thr Leu Thr
1 5 10

<210> 90

<211> 164

<212> DNA

<213> Artificial

<220>

<223> pBS plasmid cleavage hotspots

<400> 90

aaaaaaagga tctcaagaag atcctttgat cttttctacg gggctctgacg ctcaagtggaa 60

cgaaaactca cgttaaggga ttttggtcat gagattatca aaaaggatct tcacctagat 120

ccttttaaat taaaaatgaa gttttaaatc aatctaaagt atat 164

<210> 91

<211> 220

<212> DNA

<213> Artificial

<220>

<223> K-DNA cleavage hotspots

<400> 91

gaggcctaaa attccaaccg aaaatcgaga gggtactttt ttggagcccg aaaaccaccc 60

aaaatcaagg aaaaatggcc aaaaaatgcc aaaaaatagc gaaaataccc cgaaaattgg 120

caaaaattaa caaaaaatag cgaatttccc tgaatttttag gcgaaaaaac ccccgaaaat 180

ggccaaaaac gcactgaaaa tcaaatctg aacgtctacg 220

<210> 92

<211> 19

<212> DNA

<213> Homo sapiens

<400> 92

ctttttaaaa aaattgttt 19

<210> 93

<211> 13

<212> DNA

<213> Homo sapiens

<400> 93

ttttttaaac aaa 13

<210> 94
<211> 22
<212> RNA
<213> Homo sapiens

<400> 94
aaaaaaaaaa aaaaaaaaaa aa

22

<210> 95
<211> 14
<212> DNA
<213> Homo sapiens

<400> 95
ataatctcat gacc

14

<210> 96
<211> 14
<212> DNA
<213> Homo sapiens

<400> 96
catttttaat ttaa

14

<210> 97
<211> 14
<212> DNA
<213> Homo sapiens

<400> 97
tcatttttaa tttta

14

<210> 98
<211> 14
<212> DNA
<213> Homo sapiens

<400> 98
aaaatccctt aacg

14

<210> 99
<211> 14
<212> DNA
<213> Homo sapiens

<400> 99
aagatccttt ttga

14

<210> 100
<211> 14

<212>	DNA	
<213>	Homo sapiens	
<400>	100	
	gagtttttcgt tcca	14
<210>	101	
<211>	14	
<212>	DNA	
<213>	Homo sapiens	
<400>	101	
	aggatctcaa gaag	14
<210>	102	
<211>	14	
<212>	DNA	
<213>	Homo sapiens	
<400>	102	
	aagtttttaa tcaa	14
<210>	103	
<211>	14	
<212>	DNA	
<213>	Homo sapiens	
<400>	103	
	gaagtttttaa atca	14
<210>	104	
<211>	14	
<212>	DNA	
<213>	Homo sapiens	
<400>	104	
	tcctttttaa ttaa	14
<210>	105	
<211>	15	
<212>	DNA	
<213>	Homo sapiens	
<400>	105	
	agataatcaa aaaag	15
<210>	106	
<211>	14	
<212>	DNA	
<213>	Homo sapiens	

<400> 106 tcaatctaaa gtat	14
<210> 107 <211> 23 <212> DNA <213> Homo sapiens	
<400> 107 ctttttaaaa aaattgtttg aat	23
<210> 108 <211> 27 <212> DNA <213> Homo sapiens	
<400> 108 catctctttg ttaaagacaa acaaaac	27
<210> 109 <211> 19 <212> DNA <213> Homo sapiens	
<400> 109 attaatgttt ccttctttt	19
<210> 110 <211> 21 <212> DNA <213> Homo sapiens	
<400> 110 gcagttaaat catctgctgc t	21
<210> 111 <211> 16 <212> DNA <213> Homo sapiens	
<400> 111 ggaattaaga ataatg	16
<210> 112 <211> 17 <212> DNA <213> Homo sapiens	
<400> 112 ttttttaatg tcaactc	17

<210> 113
<211> 18
<212> DNA
<213> Homo sapiens

<400> 113
tctattaaaa aggaaaaa 18

<210> 114
<211> 19
<212> DNA
<213> Homo sapiens

<400> 114
aagaataaat tttcttttt 19

<210> 115
<211> 21
<212> DNA
<213> Homo sapiens

<400> 115
agtggtgaaa gtgggcattc t 21

<210> 116
<211> 21
<212> DNA
<213> Homo sapiens

<400> 116
tgagctaaga tcacaccact g 21

<210> 117
<211> 20
<212> DNA
<213> Homo sapiens

<400> 117
gtgttttaaa cttagtaaca 20

<210> 118
<211> 19
<212> DNA
<213> Homo sapiens

<400> 118
tctgataaga ataatagga 19

<210> 119
<211> 12

<212>	DNA	
<213>	Homo sapiens	
<400>	119	
	gtattttaaaa aa	12
<210>	120	
<211>	20	
<212>	DNA	
<213>	Homo sapiens	
<400>	120	
	atatataaga ggattaccag	20
<210>	121	
<211>	26	
<212>	DNA	
<213>	Homo sapiens	
<400>	121	
	atacacaaat ttggacccaa agagag	26
<210>	122	
<211>	12	
<212>	DNA	
<213>	Homo sapiens	
<400>	122	
	ttttttaaaa aa	12
<210>	123	
<211>	23	
<212>	DNA	
<213>	Homo sapiens	
<400>	123	
	tgacttagaa gtccatgaat cca	23
<210>	124	
<211>	23	
<212>	DNA	
<213>	Homo sapiens	
<400>	124	
	tgcccttaaga aggtcaaagg cag	23
<210>	125	
<211>	12	
<212>	DNA	
<213>	Homo sapiens	

<400> 125
aaaaacaaaa aa 12

<210> 126
<211> 18
<212> DNA
<213> Homo sapiens

<400> 126
aaaattaaaa attgtgat 18

<210> 127
<211> 20
<212> DNA
<213> Homo sapiens

<400> 127
ggggttaaga ttgaagaatg 20

<210> 128
<211> 22
<212> DNA
<213> Homo sapiens

<400> 128
ggattcaaaa ggagttattg at 22

<210> 129
<211> 18
<212> DNA
<213> Homo sapiens

<400> 129
tcttataaaa agtaaact 18

<210> 130
<211> 6
<212> PRT
<213> Homo sapiens

<400> 130

Ala Cys Asp Glu Phe Gly
1 5

<210> 131
<211> 6
<212> PRT
<213> Homo sapiens

<400> 131

Ala Cys Asp His Ile Lys

1 5

<210> 132

<211> 25

<212> DNA

<213> Homo sapiens

<400> 132

cctcatgaca ggatcaaatt cacac

25

<210> 133

<211> 28

<212> DNA

<213> Homo sapiens

<400> 133

gcccatggca atcctgagtt ctagtttg

28

<210> 134

<211> 18

<212> DNA

<213> Homo sapiens

<400> 134

tcttttctac ggggtctg

18

<210> 135

<211> 18

<212> DNA

<213> Homo sapiens

<400> 135

caggcaacta tggatgaa

18

<210> 136

<211> 17

<212> DNA

<213> Homo sapiens

<400> 136

aatacgactc actatag

17

<210> 137

<211> 22

<212> DNA

<213> Homo sapiens

<400> 137

agctatttag gtgacactat ag

22

<210> 138
<211> 5
<212> PRT
<213> Artificial

<220>
<223> Wild type L1.2mneoI construct

<400> 138

Glu Glu Arg Val Ser
1 5

<210> 139
<211> 4
<212> PRT
<213> Artificial

<220>
<223> Wild type L1.2mneoI construct

<400> 139

Arg Glu Lys Gly
1

<210> 140
<211> 3
<212> PRT
<213> Artificial

<220>
<223> Wild type L1.2mneoI construct

<400> 140

Ala Arg Arg
1

<210> 141
<211> 6
<212> PRT
<213> Artificial

<220>
<223> Wild type L1.2mneoI construct

<400> 141

Tyr Pro Ala Lys Leu Ser
1 5

<210> 142
<211> 4
<212> PRT
<213> Artificial

<220>
<223> Wild type L1.2mneoI construct

<400> 142

Phe Ala Asp Asp
1

<210> 143
<211> 4
<212> PRT
<213> Artificial

<220>
<223> Wild type L1.2mneoI construct

<400> 143

His Met Lys Lys
1

<210> 144
<211> 4
<212> PRT
<213> Artificial

<220>
<223> Wild type L1.2mneoI construct

<400> 144

Cys Ser Ser Ser
1

<210> 145
<211> 5
<212> PRT
<213> Artificial

<220>
<223> Wild type L1.2mneoI construct

<400> 145

Cys Trp Trp Asp Cys
1 5

<210> 146
<211> 4
<212> PRT
<213> Artificial

<220>
<223> Mutant L1.2mneoI construct

<400> 146

Ala Ala Ala Ala

1

<210> 147

<211> 3

<212> PRT

<213> Artificial

<220>

<223> Mutant L1.2mneoI construct

<400> 147

Ala Ala Ala

1

<210> 148

<211> 6

<212> PRT

<213> Artificial

<220>

<223> Mutant L1.2mneoI construct

<400> 148

Ala Ala Ala Ala Leu Ser

1

5

<210> 149

<211> 4

<212> PRT

<213> Artificial

<220>

<223> Mutant L1.2mneoI construct

<400> 149

Phe Ala Tyr Asp

1

<210> 150

<211> 4

<212> PRT

<213> Artificial

<220>

<223> Mutant L1.2mneoI construct

<400> 150

Ala Ala Ala Ala

1

<210> 151

<211> 3

<212> PRT
<213> Artificial

<220>
<223> Mutant L1.2mneoI construct

<400> 151

Ala Ala Ala
1

<210> 152
<211> 5
<212> PRT
<213> Artificial

<220>
<223> Mutant L1.2mneoI construct

<400> 152

Ser Trp Trp Asp Ser
1 5